

AMENDMENTS TO THE CLAIMS

Please amend the claims as follows. This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1. (Currently amended) A ~~multiple replaceable reservoirs or~~ cartridge for use with an electrostatic spraying device, ~~of the type wherein at least one electrostatically sprayable material is contained in a reservoir housing and at least one spraying nozzles region is in fixed or replaceable relation to the body of the multiple replaceable reservoirs or cartridges, the electrostatic spraying device comprising the electrostatic spraying device having high voltage terminal, circuitry arranged so that, in use, the material issuing from the spraying nozzles region in a direction away from said spraying nozzles region forms an electrostatically charged spray, said spray having having a high voltage and a polarity and wherein an electric field forms in the vicinity of the nozzles during use, the multiple replaceable reservoirs or cartridge~~[[s]] comprising:

at least one storage region configured to store electrostatically sprayable material ~~storage region~~;

at least one ~~replaceable~~ spraying nozzles region;

at least one ~~material conducting tube region~~ connecting the ~~material storage region~~ at least one storage region to the at least one spraying nozzles region, wherein during electrostatic spraying operations electrostatically sprayable material flows from

the material storage region to the at least one spraying nozzles; ~~region either in passively gravity induced or user induced pneumatically pumping mean arrangement; and~~

a terminal configured to make electrical contact with the high voltage terminal of the electrostatic spraying device when the cartridge is mounted in the electrostatic spraying device; and

at least one ~~nozzle ring configuration for generating the~~ ring surrounding the at least one spraying nozzle, the at least one ring electrically connected to the terminal, the at least one ring configured to generate an electric field in the vicinity of the at least one spraying nozzles ~~regions~~ so that spraying from the at least one nozzle[[s]] is focused when the forward ~~extremity~~ extremities of the ~~nozzle ring configuration is~~ at least one nozzle and at least one ring are brought within a predetermined distance ~~from~~ of an earthed target to be sprayed.

2. (Currently amended) The cartridge of claim 1 wherein the at least one spraying nozzle ~~region as claimed in claim 1 in which the nozzles are or a nozzle tube is~~ mounted in fixed relation to the body of the cartridge ~~electrostatic spraying device and the nozzle ring configuration~~ at least one ring is in the form of an annular cable mounted on the ~~body of electrostatic spraying device~~ cartridge in substantially concentric relation with the at least one spraying nozzle[[s]]. ~~The nozzle ring configuration and the nozzles may however be adjustable with respect to one another in the direction of spraying.~~

3. (Currently amended) ~~The spraying nozzle region as claimed in~~ cartridge ~~of claim 1 in which the~~ wherein the at least one nozzle further comprises a plurality of ~~nozzles are mounted in fixed relation to the body of the multiple replaceable reservoirs~~ cartridge ~~and the nozzle ring configuration at least one ring is in the form of an annular~~ cartridge ~~mounted on the body of the reservoir~~ cartridge ~~in substantially concentric relation~~ with the plurality of ~~nozzles. The nozzle ring configuration and the nozzles may~~ however be adjustable with respect to one another in the direction of spraying.

4. (Currently amended) ~~A device as claimed in~~ The cartridge of ~~claim 2~~ wherein tip of the nozzles being the at least one nozzle is ~~arranged within the spraying~~ nozzles region are mounted in fixed relation to the body of the device and mounted at an ~~arranged~~ substantially a 45 degree angle, typically of about 45 degrees, to the an axis of ~~the body of the device~~ cartridge.

5. (Currently amended) ~~A device as claimed in~~ The cartridge of ~~claim 3~~ wherein the tip of the nozzles being the plurality of nozzles are ~~arranged within the~~ spraying nozzles region are mounted in fixed relation to the top of the multiple ~~replaceable reservoirs and mounted at~~ substantially a 45 degree an arranged angle, ~~typically of about 45 degree, to the an~~ axis of the top of the multiple replaceable reservoirs cartridge.

6. (Currently amended) ~~A device as claimed in~~ The cartridge of claim 2 wherein the ~~tip of the~~ at least one nozzle tube further comprises a nozzle tube, the nozzle tube having a tip, the tip of the nozzle tube is mounted in fixed relation to the cartridge body of the device and configured to assume ~~mounted at an arranged angle, typically in~~ the range of about 0 to 45 degrees~~[[,]]~~ to the an axis of the ~~body of the~~ electrostatic spraying device when the cartridge is mounted in the electrostatic spraying device.

7. (Currently amended) ~~A device as claimed in~~ The cartridge of claim 3 wherein the ~~tip of the~~ at least one nozzle~~[[s]]~~ further comprises a nozzle tube, the nozzle tube having a tip, the tip of the nozzle tube ~~being arranged within the spraying nozzles region are~~ mounted in fixed relation to the ~~top of the multiple replaceable reservoirs and~~ mounted cartridge at an arranged angle, typically in the range of from 0 to 45 degrees~~[[,]]~~ to the an axis of the ~~spraying nozzles region of the multiple replaceable reservoirs~~ cartridge.

8. (Currently amended) ~~A device as claimed in~~ The cartridge of claim 2 where the at least one storage regions further comprises a plurality of storage regions, each storage region of the plurality configured to store a different electrostatically sprayable material; where the at least one spraying nozzle further comprises a plurality of spraying nozzles; where the at least one tube further comprises a plurality of tubes, each of the tubes of the plurality configured to convey a different one of the plurality of electrostatically sprayable materials to a different one of the plurality of spraying nozzles

~~and wherein the spraying nozzles are mounted in fixed relation to the body of the device and to the body of an individual reservoir through a material conducting tube region, and several materials in electrostatically sprayable form may be released simultaneously for mixing and releasing at the nozzles~~ configured to mix at least two of the plurality of electrostatically sprayable materials during spraying operations.

9. (Currently amended) ~~A device as claimed in~~ The cartridge of claim 3 ~~where the at least one storage region further comprises a plurality of storage regions, each storage region of the plurality configured to store a different electrostatically sprayable material; where the at least one spraying nozzle further comprises a plurality of spraying nozzles; and wherein each nozzle from the spraying nozzles is mounted in fixed relation to the top of each multiple replaceable reservoir being arranged within the multiple replaceable reservoirs region, and several materials in electrostatically sprayable form may be released simultaneously for mixing and releasing at the nozzles~~ are configured to mix at least two of the different electrostatically sprayable materials during spraying operations.

10. (Currently amended) An electrostatic spraying device comprising:
a high voltage generator having a high voltage output;[[,]]
at least a one dispensing nozzle[[s]] ~~from which an~~ configured to release
electrostatically sprayable material during spraying operations; is sprayed,
~~said sprayable material had a voltage and a polarity,~~

~~and~~ at least one reservoir~~[[s]]~~ configured to store ~~for containing~~ materials to be sprayed; ~~in bulk further comprises:~~

a tube connecting the at least one dispensing nozzle and the at least one reservoir;

a pumping means for supplying pumping the ~~said~~ material ~~through a passage~~ ~~leading to the~~ through the tube from the at least one reservoir to the at least one dispensing nozzle~~[[s,]]~~;

means coupling the high voltage output of the high voltage generator to the bulk material ~~so that the~~ for imparting a high voltage is conducted through to the bulk material ~~to the material~~ present at the at least one dispensing nozzle~~[[s]]~~

at least one ring surrounding the at least one dispensing nozzle, the at least one ring coupled to the high voltage generator, the at least one ring configured to generate an electric field in the vicinity of the at least one dispensing nozzle;

an actuating means for activating the high voltage generator and the pumping means;

wherein during spraying operations when the high voltage generator and the pumping means are activated by the actuating means whereby the electrostatic spraying device is configured to impart an electrostatic charge to the material issuing from the at least one nozzle~~[[s]]~~ under the influence of an applied voltage forms to form an electrostatically charged spray, ~~wherein an electric field forms in the vicinity of the nozzles during use,~~

~~characterized by the provision of a nozzle-ring configuration on which a voltage of the same polarity as that applied to the material to be sprayed is developed in use, the nozzle-ring configuration being located forwardly of the dispensing nozzles in the direction of spraying and arranged in such a way as to generate the electric field in the vicinity of the nozzles so that spraying from the nozzles is focused~~ and to focus the electrostatically charged spray to prevent immediate dispersion loss of the charged spray when forward extremities of the at least one ring and the at least one spraying nozzle is brought in proximity to an earthed target to be sprayed and facilitate spraying from the nozzles; and

~~an actuating means for activating the high voltage generator and the pumping means.~~

11. (Currently amended) ~~A device as claimed in~~ The electrostatic spraying device of claim 10 wherein the nozzle-ring configuration generates the at least one ring is configured to generate the electric field such so that spraying the electrostatically charged spray from the at least one dispensing nozzle[[s]] is focused to prevent immediate loss of the electrostatically charged spray and facilitate spraying from the at least one dispensing nozzle[[s]] when the forward extremity of the nozzle-ring configuration at least one ring is brought within a predetermined distance from an to the earthed target to be sprayed.

12. (Currently amended) ~~A device as claimed in~~ The electrostatic spraying device of claim 10 ~~in which~~ wherein the pumping means further comprises means for pneumatically pumping ~~said~~ the material from the at least one reservoir[[s]] to the at least one dispensing nozzle[[s]].

13. (Currently amended) ~~A device as claimed in~~ The electrostatic spraying device of claim 10 ~~in which~~ wherein pumping of the material is produced in response to operation of the actuating means by ~~the~~ a user.

14. (Currently amended) ~~A device as claimed in~~ The electrostatic spraying device of claim 13 ~~in which~~ wherein operation of the actuating means ~~is accompanied by~~ causes priming of ~~the~~ a passage leading to ~~the nozzle~~ an outlet of the at least one dispensing nozzle with the material in preparation for ~~pumping~~ spraying operations.

15. (Currently amended) ~~A device as claimed in~~ The electrostatic spraying device of claim 14 ~~in which operation of the actuating means is also accompanied by operation of a high voltage generator assoiciated with the means for applying high voltage to the material to be electrostatically sprayed whereby all of these operations together with pumping of the material are effected in response to~~ wherein a single operation of the actuating means by the user activates the high voltage generator and the pumping means.

16. (Currently amended) ~~A device as claimed in~~ The device of claim 14 in
~~which wherein the pumping means and of the material and/or application of the high~~
~~voltage generator thereto are affected~~ activated in response to a separate operations of the
~~actuating means or operation of a different actuating means which effects pumping and/or~~
~~electrostatically spraying.~~

17. (Currently amended) An electrostatic spraying device comprising:
a high voltage generator having a high voltage output;[[,]]
at least one special-arranged dispensing nozzle[[s]] configured to release from
~~which an electrostatically sprayable material is sprayed in use wherein~~
~~when sprayed said spray had a voltage and a polarity~~ during spraying
operations;[[,]]
~~multiple replaceable or fixed~~ a housing enclosing at least one reservoir[[s]] for
containing configured to store materials to be sprayed; ~~wherein during use~~
~~said reservoirs contain materials to be sprayed,~~
a tube connecting the at least one dispensing nozzle and the at least one reservoir,
the tube configured to convey the materials to be sprayed from the at least
one reservoir to the at least one dispensing nozzle;
means coupling the high voltage output of the high voltage generator to the
materials so that the voltage is conducted through the materials to the
materials present at the at least one dispensing nozzle[[s]];

at least one ring surrounding the at least one dispensing nozzle, the at least one ring coupled to the high voltage generator, the at least one ring configured to develop a high voltage of the same polarity as that applied to the materials being sprayed and to generate an electric field in the vicinity of the at least one dispensing nozzle;

wherein during spraying operations the electrostatic spraying device is configured to impart an electrostatic charge to ~~whereby~~ the materials issuing from the at least one nozzle[[s]] under the influence of an applied voltage forms an electrostatically charged spray, further comprising a nozzle ring configuration on which a high voltage of the same polarity as that applied to the materials to be sprayed is developed in use, the nozzle ring configuration being located forwardly of the nozzles in the direction of spraying and arranged in such a way as to generate the electric field in the vicinity of the nozzles so that spraying from the nozzles is focused and to focus the material being sprayed when the a forward extremity of the nozzle ring configuration ring is brought in proximity to within a predetermine distance from an earthed target to be sprayed.

18. (Currently amended) ~~The spraying nozzle regions as claimed in electrostatic spraying device of claim 17 in which the nozzles are~~ wherein the at least one dispensing nozzle is mounted in fixed relation to the body of the multiple replaceable reservoirs housing enclosing the at least one reservoir and the nozzle ring configuration

at least one ring is in the form of an annular cable mounted on the ~~body of reservoir~~
housing enclosing the at least one reservoir in substantially concentric relation with the
at least one dispensing nozzle[[s]]. ~~The nozzle ring configuration and the nozzles may~~
~~however be adjustable with respect to one another in the direction of spraying.~~

19. (Currently amended) ~~A device as claimed in~~ The electrostatic spraying
device of claim 17 in which the further comprising means for supplying ~~said the~~ materials
to the at least one dispensing nozzle[[s]] ~~is operable to feed the material~~ passively.

20. (Currently amended) ~~A device as claimed in~~ The electrostatic spraying
device of claim 17 in which the further comprising means for supplying ~~said the~~ material
to the at least one dispensing nozzle[[s]] ~~is operable to feed the material~~ by a user-
induced operation.

21. (Currently amended) ~~A device as claimed in~~ The electrostatic spraying
device of claim 17 wherein said the electrostatic spraying device further generates is
further configured to generate an iontophoresis effect to enhance ~~sprayed~~ material
transport through the skin until when the forward extremity of the ~~nozzle ring~~
~~configuration~~ at least one nozzle is within a distance of 2 cm ~~from a human~~ of skin of an
earthed target ~~or an earthed target~~.

22. (Currently amended) ~~A device as claimed in~~ The electrostatic spraying
device of claim 18 ~~wherein said device further comprises a source of high voltage and~~
~~wherein the nozzle ring configuration is composed of~~ at least one ring comprises, at least
in part, a semi-insulating material (~~e.g. Si:GaAs etc.~~) which is coupled to the source of
high voltage, ~~said~~ the semi-insulating material having sufficient conductivity to permit a
potential to be established at a location forwardly of ~~said the at least one~~ nozzle[[s]]
which is of the same polarity as that applied to the material ~~emerging at~~ issuing from the
at least one nozzle[[s]] during spraying operations.